

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): An organic light-light conversion device comprising:
a light sensing unit having a layer including a photo-conductive organic semiconductor that causes a photo-current multiplication phenomenon by light irradiation, and
a light emitting unit having a layer including an electroluminescent organic semiconductor that emits light by current injection, characterized in that
at least one of the photo-conductive organic semiconductor and the electroluminescent organic semiconductor is a polymer semiconductor.
2. (original): The organic light-light conversion device according to claim 1, wherein the photo-conductive organic semiconductor is a polymer semiconductor.
3. (original): The organic light-light conversion device according to claim 1, wherein the electroluminescent organic semiconductor is a polymer semiconductor.
4. (original): The organic light-light conversion device according to any one of claims 1 to 3, wherein the photo-conductive organic semiconductor and the electroluminescent organic semiconductor are polymer semiconductors.

5. (previously presented): The organic light-light conversion device according to any one of claims 1 to 3, comprising:

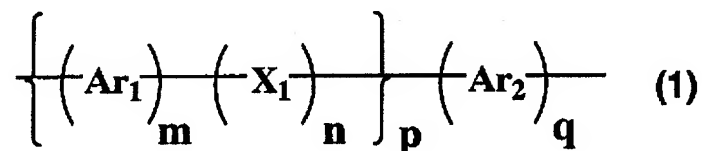
- a) a light sensing unit having a layer including the photo-conductive organic semiconductor,
- b) a light emitting unit having a layer including the electroluminescent organic semiconductor placed on a different location from the light sensing unit on the same substrate, and
- c) a conductive layer connecting the light sensing unit to the light emitting unit laid on the same substrate.

6. (original): The organic light-light conversion device according to claim 5, wherein a light shielding member is provided between the light sensing unit and light emitting unit.

7. (original): The organic light-light conversion device according to claim 5, wherein a translucent member having a transmittance that suppresses but does not completely shield the flow of feedback light into the light sensing unit is provided between the light sensing unit and the light emitting unit.

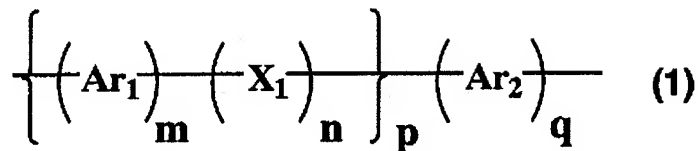
8. (previously presented): The organic light-light conversion device according to any one of claims 1 to 3, wherein the light sensing unit having a layer including the photo-conductive organic semiconductor is integrally laminated with the light emitting unit having a layer including the electroluminescent organic semiconductor.

9. (previously presented): The organic light-light conversion device according to any one of claims 1 to 3, wherein the polymer semiconductor contains one or more repeating units represented by the following Formula (1):



wherein Ar₁ and Ar₂ each independently represent an arylene group or a divalent heterocyclic group; X₁ represents -CR₁=CR₂-, -C≡C- or -N(R₃)--; R₁ and R₂ each independently represent a hydrogen atom, an alkyl group, an aryl group, a monovalent heterocyclic group, a carboxyl group, a substituted carboxyl group or a cyano group; R₃ represents a hydrogen atom, an alkyl group, an aryl group, a monovalent heterocyclic group, an arylalkyl group or a substituted amino group; m, n and q each independently represent an integer of 0 or 1; p represents an integer of 0 to 2; and m + n and p + q are each 1 or more, provided that Ar₁, X₁, R₁, R₂ and R₃, if they are each multiple, can be respectively identical or different, and has a polystyrene-converted number average molecular weight of 1 × 10³ to 1 × 10⁸.

10. (currently amended): The organic light-light conversion device according to any one of claims 1 to 3, wherein the layer including the photo-conductive organic semiconductor and/or the layer including the electroluminescent organic semiconductor contains two or more polymer semiconductors containing one or more repeating units represented by the following Formula (1):



wherein Ar₁ and Ar₂ each independently represent an arylene group or a divalent heterocyclic group; X₁ represents -CR₁=CR₂-, -C≡C- or -N(R₃)-, R₁ and R₂ each independently represent a hydrogen atom, an alkyl group, an aryl group, a monovalent heterocyclic group, a carboxyl group, a substituted carboxyl group or a cyano group; R₃ represents a hydrogen atom, an alkyl group, an aryl group, a monovalent heterocyclic group, an arylalkyl group or a substituted amino group; m, n and q each independently represent an integer of 0 or 1; p represents an integer of 0 to 2; and m + n and p + q are each 1 or more, provided that Ar₁, X₁, R₁, R₂ and R₃, if they are each multiple, can be respectively identical or different, and has a polystyrene-converted number average molecular weight of 1 × 10³ to 1 × 10⁸.

11. (previously presented): An image intensifier characterized by comprising a plurality of an organic light-light conversion devices comprising:
- a light sensing unit having a layer including a photo-conductive organic semiconductor that causes a photo-current multiplication phenomenon by light irradiation, and
 - a light emitting unit having a layer including an electroluminescent organic semiconductor that emits light by current injection, characterized in that
 - at least one of the photo-conductive organic semiconductor and the electroluminescent organic semiconductor is a polymer semiconductor.

12. (currently amended): A light sensor characterized by comprising an organic light-light conversion device comprising:

a light sensing unit having a layer including a photo-conductive organic semiconductor that causes a photo-current multiplication phenomenon by light irradiation, and

a light emitting unit having a layer including an electroluminescent organic semiconductor that emits light by current injection, characterized in that

at least one of the photo-conductive organic semiconductor and the electroluminescent organic semiconductor is a polymer semiconductor, and

a ~~means to~~ unit which measures and outputs a voltage applied to both ends of the layer including the electroluminescent organic semiconductor.